

April 16, 2018

Matthew J Isberner  
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RE: 441 Lake Avenue Facility Assessment  
Carl Walker Proposal No. R1-18-063

Dear Matt:

Carl Walker, a division of WGI (Carl Walker), has completed a pre-sale condition assessment review of the facility at 441 Lake Avenue in Racine, Wisconsin. The review was performed to provide an overall assessment of the structure, as well as review the performance of repair and maintenance work completed in recent years.

### **Background**

The Johnson Bank Drive-thru parking structure located at 441 Lake Avenue in Racine, Wisconsin consists of a single supported level and an on-grade level with overall dimensions of 118'x118'. The supported level of the facility, accessed from Lake Avenue to the west, includes four drive-thru lanes and provides 16 parking spaces. The lower level, accessed from 5<sup>th</sup> Street to the south, is utilized as a storage area.

The parking structure is constructed of cast-in-place conventionally reinforced concrete slabs, joists, and columns. An enclosed stair tower is located in the southwest corner of the structure. A bank building, drive-thru lanes, and planter boxes are constructed on top of the parking structure. It is our understanding that the bank building and teller lanes, with the exception of the ATM location will be demolished in the near future. In addition, the large planter box will be lowered. These modifications are intended to reduce the overall loading of the structural support system.



### **Evaluation Summary**

Carl Walker completed an onsite evaluation of the 441 Lake Avenue parking structure on April 18, 2018. The assessment included visual observations to identify the structures current condition and maintenance needs, as well as identify any current deficiencies. Based on the review of the parking structure, the structure was determined to be in fair to good overall condition.

Repair and maintenance work has been performed to the structure over the last several years, including concrete repairs to the slabs and joists as well as the installation of a traffic bearing waterproofing system. Structural repairs have also been performed including installation of supplemental column supports and strengthening of concrete

joists. These repairs were performed to address deficiencies identified in the structure and to address observed leaking, with the intent to improve the long-term performance of the facility.

The concrete slabs and joists are in good overall condition, with isolated repairs required to address cracking and spalling. The deterioration is a result of leaking in the structure, which has been addressed by the addition of a waterproofing deck coating system in 2014. Based on current review, additional concrete repairs are required to the structure, although no significant structural concerns were identified. These ongoing repairs have been addressed as part of an ongoing repair and maintenance program based on available budget.

The surface applied waterproofing deck coating is in fair overall condition with only minor evidence of cracking in the topcoat layer and a few localized areas of debonding. No evidence of current leaking was observed at this time, although the deck coating should be repaired to prevent the opportunity for moisture to infiltrate the structure. It is important to note that the long-span construction with conventionally reinforced concrete has resulted in typical cracking of the concrete slab over the joists. Based on this type of construction and age of the coating, a recoat of the waterproofing will be required to extend the life of the system.

The concrete joists exhibiting localized cracking and spalling. These forms of deterioration have been addressed with conventional patching techniques. The more severe cracking was repaired by a combination of supplemental strengthening and/or epoxy injection. At this point, the joist deterioration noted can be addressed by conventional patching. Although no evidence of structural concern was observed during the visual review, the joists should be periodically monitored for the development of additional cracking. And with the modifications/demolition at the upper level, the reduced loading will decrease the likelihood of future shear cracking from occurring.

### **Closure**

Constant exposure to vehicular usage and the natural elements requires ongoing repair to maintain the structure in safe operating condition and to provide waterproofing protection to minimize future deterioration. In general, the deterioration and repairs at 441 Lake Avenue should be considered normal for a structure of this age, construction, and location. Following concrete repairs, the most effective measure to achieve the expected service life includes maintenance of the existing deck coating at the upper level, in accordance with the recommendation of ACI 362, Guide for the Design of Durable Parking Structures.

If you have any questions or require any additional information, please do not hesitate to call or email.

Sincerely,  
Wantman Group, Inc.



Torrey L. Thompson  
Division Manager - Restoration